Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A transformer embedded in an LTCC substrate, comprising:

a ceramic substrate comprised of a plurality of ceramic tape layers;

at least a first one of said ceramic tape layers layered between a plurality of second ceramic tape layers, said first ceramic tape layer having a larger permeability value as compared to said second ceramic tape layers;

~~a ceramic toroidal core embedded within said ceramic substrate~~; and

at least one conductive coil disposed within said plurality of ceramic tape layers, said conductive coil in the shape of a toroid having a central axis oriented transverse to said tape layers, and comprising a plurality of turns about ~~said~~ a region which defines a ceramic toroidal core, wherein said ceramic toroidal core is intersected by said first ceramic tape layer ~~integrally formed with said ceramic substrate in a co-firing process~~.

2. (Previously presented) The transformer according to claim 1 wherein said plurality of turns is contained within said ceramic substrate at all points.

3. (Canceled)

4. (Original) The transformer according to claim 1 further comprising at least one conductive metal ground plane layer disposed within said ceramic substrate.

5. (Currently amended) A transformer embedded in an LTCC substrate, comprising:

a ceramic substrate comprised of a plurality of ceramic tape layers;

at least a first one of said ceramic tape layers layered between a plurality of second ceramic tape layers, said first ceramic tape layer having a larger permeability

value as compared to said second ceramic tape layers;

~~a ceramic toroidal core embedded within said ceramic substrate~~;

at least one conductive coil formed in the shape of a toroid having a central axis oriented transverse to said tape layers, and comprising a plurality of turns about ~~said~~ a region which defines a ceramic toroidal core, wherein said ceramic toroidal core is intersected by said first ceramic tape layer ~~integrally formed with said ceramic substrate in a co firing process~~; and

at least one conductive metal ground plane layer disposed within said ceramic substrate, wherein said conductive metal ground plane layer is interposed between said conductive coil and at least one surface mount component disposed on an outer surface of said ceramic substrate.

6. (Original) The transformer according to claim 1 further comprising a second conductive coil including a plurality of turns disposed about said ceramic toroidal core and having a coil radius different from said first conductive coil, and wherein a toroidal core of said second conductive coil is also intersected by said first ceramic tape layer .

7. (Canceled)

8. (Original) The transformer according to claim 1 wherein said transformer is an autotransformer.

9. (Original) The transformer according to claim 1 wherein at least a portion of said ceramic toroidal core region has a permeability greater than one.

10. (Currently amended) A method for forming a transformer in a ceramic substrate, comprising the steps of:

forming an unfired ceramic substrate comprised of a plurality of ceramic tape layers;

positioning at least a first one of said ceramic tape layers at a location layered between a plurality of second ceramic tape layers;

selecting a permeability of said first ceramic tape layer to be a larger value as

compared to said second ceramic tape layers;

forming at least one conductive coil formed in the shape of a toroid having a central axis oriented transverse to said tape layers, and comprising a plurality of turns about ~~an unfired ceramic~~ a toroidal core region ~~defined within an unfired ceramic substrate~~;

positioning said conductive coil so that it is intersected by said first ceramic tape layer; and

co-firing said plurality of tape layers comprising ~~unfired ceramic toroidal core region,~~ said unfired ceramic substrate, and said conductive coil to form an integral ceramic substrate structure with said conductive coil at least partially embedded therein.

11. (Canceled)

12. (Original) The method according to claim 10 further comprising the step of disposing a conductive ground plane layer between said conductive coil and an outer surface of said ceramic substrate.

13. (Currently amended) A method for forming a transformer in a ceramic substrate, comprising the steps of:

forming an unfired ceramic substrate comprised of a plurality of ceramic tape layers;

positioning at least a first one of said ceramic tape layers at a location layered between a plurality of second ceramic tape layers;

selecting a permeability of said first ceramic tape layer to be a larger value as compared to said second ceramic tape layers;

forming at least one conductive coil formed in the shape of a toroid having a central axis oriented transverse to said tape layers, and comprising a plurality of turns about ~~an unfired ceramic~~ a toroidal core region ~~defined within an unfired ceramic substrate~~;

co-firing said plurality of tape layers comprising ~~unfired ceramic toroidal core region,~~ said unfired ceramic substrate, and said conductive coil to form an integral

ceramic substrate structure with said conductive coil at least partially embedded therein; and

disposing a conductive ground plane layer between said conductive coil and at least one surface mount component disposed on an outer surface of said ceramic substrate.

14. (Original) The method according to claim 10 further comprising the step of forming a second conductive coil including a plurality of turns disposed about said ceramic toroidal core.

15. (Original) The method according to claim 14 further comprising the step of selecting a coil radius of said second conductive coil to be different from a coil radius of said first conductive coil.

16. (Original) The method according to claim 10 further comprising the step of forming a second conductive coil of a plurality of turns disposed about a radial portion of said ceramic toroidal core exclusive of said radial portion of said ceramic toroidal core where said first conductive coil is disposed.

17. (Original) The method according to claim 10 further comprising the step of providing at least one tap along a length of said conductive coil to form an autotransformer.

18. (Currently amended) A method for forming a transformer in a ceramic substrate, comprising the steps of:

forming an unfired ceramic substrate comprised of a plurality of ceramic tape layers;

positioning at least a first one of said ceramic tape layers at a location layered between a plurality of second ceramic tape layers;

selecting a permeability of said first ceramic tape layer to be a larger value as compared to said second ceramic tape layers;

forming a plurality of vias and traces in ~~an~~ said unfired ceramic substrate to

define at least one conductive coil formed in the shape of a toroid having a central axis oriented transverse to said tape layers, and comprising a plurality of turns about ~~an unfired ceramic~~ a toroidal core region ~~defined within said unfired ceramic substrate~~;

positioning said conductive coil so that it is intersected by said first ceramic tape layer; and

co-firing said plurality of tape layers comprising ~~unfired ceramic toroidal core region,~~ said unfired ceramic substrate[[,]] and said conductive coil to form an integral ceramic substrate structure with said conductive coil at least partially embedded therein.

19. (Original) The method according to claim 18 further comprising the step of forming said vias from a conductive metal paste.

20. (Original) The method according to claim 18, further comprising the step of forming at least a portion of said ceramic toroidal core region of a ceramic material having a permeability greater than one.

21. (Original) The method according to claim 18 further comprising the step of disposing a conductive ground plane layer between said conductive coil and an outer surface of said ceramic substrate.

22. (Currently amended) A method for forming a transformer in a ceramic substrate, comprising the steps of:

forming an unfired ceramic substrate comprised of a plurality of ceramic tape layers;

positioning at least a first one of said ceramic tape layers at a location layered between a plurality of second ceramic tape layers;

selecting a permeability of said first ceramic tape layer to be a larger value as compared to said second ceramic tape layers;

forming a plurality of vias and traces in ~~an~~ said unfired ceramic substrate to define at least one conductive coil formed in the shape of a toroid having a central axis oriented transverse to said tape layers, and comprising a plurality of turns about ~~an unfired ceramic~~ a toroidal core region ~~defined within said unfired ceramic substrate~~;

co-firing said plurality of tape layers comprising ~~unfired ceramic toroidal core region,~~ said unfired ceramic substrate[[,]] and said conductive coil to form an integral ceramic substrate structure with said conductive coil at least partially embedded therein; and

disposing a conductive ground plane layer between said conductive coil and at least one surface mount component disposed on an outer surface of said ceramic substrate.

23. (Original) The method according to claim 18 further comprising the step of forming a second conductive coil from a plurality of conductive vias and conductive traces to define a plurality of turns disposed about said ceramic toroidal core.

24. (Original) The method according to claim 23 further comprising the step of selecting a coil radius of said second conductive coil to be different from a coil radius of said first conductive coil.

25. (Original) The method according to claim 18 further comprising the step of forming a second conductive coil of a plurality of turns disposed about a radial portion of said ceramic toroidal core exclusive of said radial portion of said ceramic toroidal core where said first conductive coil is disposed.

26. (Original) The method according to claim 18 further comprising the step of providing at least one tap along a length of said conductive coil to form an autotransformer.